

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/583,392
Applicant(s): Gary Wingett
Filed: June 19, 2006
Title: ROTATOR WHEEL

Confirmation No.: 8170
Art Unit: 2832
Examiner: Marina Fishman

Docket No.: 042933/311926
Customer No.: 00826

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.121

Sir:

In response to the Office Action dated July 18, 2008, please amend the above-identified application as follows:

Remarks begin on page 2 of this paper.

REMARKS

In the Office Action, the Examiner rejects Claims 1-4, 6, 12, and 18 under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 5,744,765 to Yamamoto ("Yamamoto"). Claims 7-11 and 13-17 are rejected under 35 U.S.C. § 103(a) as being obvious over Yamamoto in view of U.S. Pat. No. 4,246,452 to Chandler. In light of the following arguments, Applicant respectfully submits that the rejections are overcome and all claims are in condition for allowance.

The Rejections of Independent Claim 1 under §102(b) are Overcome

In the Office Action, the Examiner continues to assert that independent Claim 1 is anticipated by Yamamoto. Independent Claim 1 is generally directed to an annular dome switch structure comprising an upper dome sheet and an underlying substrate. The upper dome sheet extends from the underlying substrate defining a raised cross-sectional shape. The raised cross-sectional shape extends at least substantially along a length of an annular shaped path. The underlying substrate comprises two annular concentric pads. The upper dome sheet is configured to make electrical contact with the connection pads of the underlying substrate when the upper dome sheet is depressed towards the underlying substrate.

The Examiner argues that claim 1 does not require the pads to be continuous. The applicant respectfully submits that while claim 1 does not require the pads to be continuous, it requires the pads to be annular. The Examiner seems to have overlooked that both the concentric conductive pads must be annular. Indeed, it is clear when looking at Figures 10 and 12 of Yamamoto that there are **not two annular** concentric conductive pads.

The applicant respectfully submits that although the plurality of isolated contact points 65A in Figure 12 of Yamamoto are distributed along an annular path the individual contact points themselves are not annular. Accordingly, the separate pads 65A in Yamamoto are clearly not individually annular in shape as required by claim 1. In this regard, the New Oxford English Dictionary defines annular as "pertaining to a ring or rings". Clearly, Figure 12 only discloses one ring-like conductive pad e.g. 65b. Yamamoto simply does not disclose two annular concentric conductive pads. Therefore, Yamamoto does not anticipate Claim 1.

The Examiner further references column 11, lines 59 to 62 of Yamamoto to imply that the selecting switch is provided and operates as an on/off switch and in such case there is no need for outer contact 65a to be isolated and a continuous outer ring can be provided. Applicant respectfully submits that this implication is inaccurate. In this regard, the Office Action takes the cited passage of Yamamoto out of context and has not regarded the teaching of Yamamoto as a whole. In both of the embodiments contemplated by the cited passage, the stationary contact points must be electrically isolated in order for the device to tell which direction the lever is being tilted.

In fact, Yamamoto explicitly teaches that one electrode from the plurality of electrodes is a common electrode (*see*, e.g. column 2, lines 58 to 64). With reference to Figure 12, the electrode 65b is the common electrode. Specifically, the common electrode is a circle as mentioned in the passage at column 2, lines 58 to 64.

As mentioned, the Examiner posits that the plurality of electrically isolated contacts 65a could be replaced by a continuous outer ring because the passage at column 11, lines 57 to 63 discloses that device is turned on when the tilting lever is operated. Applicant respectfully submits, however, that this is not the case. When reading the patent as a whole, this passage is clearly an additional feature which is optionally included with each of the embodiments. It is clearly not a replacement because this goes against the object of the invention of Yamamoto at column 2, lines 9 to 11. That is, the object of the invention provides enhanced resolution for an operating direction of a switch – this cannot be achieved if only two isolated contacts are provided.

Therefore, the modification that the Examiner suggests goes against the very object that Yamamoto tries to achieve. Therefore, it is inconceivable how a person skilled in the art would modify the arrangement as taught by Yamamoto to thereby obviate all of its teaching.

The Examiner mentions Inoue as disclosing two continuous inner and outer conductors. However, for the same reasons as discussed above, two continuous conductors are wholly incompatible with Yamamoto.

Therefore, since Yamamoto neither teaches nor suggests an annular dome switch structure as recited by independent Claim 1 and the reference teaches away from the modification suggested by the Examiner, applicant respectfully submits that the rejections of

Claim 1 are overcome and Claim 1 is in condition for allowance. Further, Applicant reiterates that even if the Examiner were to apply Inoue, which is only mentioned in passing and not relied upon as a substantive grounds of rejection, Inoue does not cure the defects of Yamamoto.

The Rejection of Independent Claim 13 under §103(a) is Overcome

The Office Action asserts that independent Claim 13 is unpatentable over Yamamoto in view of Chandler. Claim 13 is directed to an input apparatus for a multimedia device comprising a rotator wheel, means for detecting rotational movement of the rotator wheel, and select means. The select means is defined as an annular dome switch including all of the recitations of independent Claim 1. As it appears that the Examiner has overlooked our comments regarding the combination of Yamamoto and Chandler or otherwise not addressed them in the Office Action, Applicant has reiterated the previously submitted comments on the combination of Yamamoto and Chandler.

In this regard, the Office Action alleges that it would have been obvious to one of ordinary skill to use a rotator wheel instead of a tilting knob in Yamamoto. However, Yamamoto explicitly states that the tilting body can freely move in the longitudinal direction of the leg portion 41 but cannot be rotated around a longitudinal axis of the leg portion (see column 6, lines 38 to 41). Accordingly, a person having skill in the art would clearly and completely understand that the tilting knob of Yamamoto does not rotate. Instead, the tilting knob pivots about supporting shafts 18 and 31 in perpendicular directions. In this way a portion of pushing section 33 engages pushing portion 12. Therefore, in order to actuate the tilting knob, a pivoting action must occur.

Further, a person having skill in the art would not be motivated to combine the rotary input device of Chandler because Yamamoto explicitly teaches against rotation. In this regard, Yamamoto teaches providing a central switch 8 which the rotary device of Chandler would interfere with by virtue of the rotary device of Chandler rotating about the spindle 108. In this way, depressing the rotary device of Chandler would actuate both the push portion 12 and the head portion 8 of Yamamoto. This result would be, of course, undesirable to a person having skill in the art.

Thus Yamamoto clearly teaches away from rotating the central switch portion. The rotary device of Chandler interferes with the central dome switch if applied to the arrangement of Yamamoto. That is, the spindle 108 of the rotary device in Chandler would interfere with the central switch when it is tilted to activate the outer switch.

Further, Chandler also fails to disclose two annular concentric conductive pads and would not work with such annular concentric pads. Therefore, a combination of Yamamoto and Chandler would not result in a combination as required by the independent claims of the present application.

In contrast embodiments of the present invention provide an unlimited number of contact points along the annular connection pads. In this way, embodiments of the present invention are able to resolve far more locations about the annular dome switch when it is actuated. This means that the annular dome switch is far more sensitive than any of the arrangements disclosed by the cited references. Advantageously, the annular dome switch as described in the embodiments of the present invention can detect even the slightest contact between the upper dome sheet and the connection pads. In this way, there are no arrangements where the upper dome sheet is in contact with the connection pads and the switch is not actuated. Comparing this to the cited references, for example Yamamoto, a switch may be depressed and the moveable contact points 13 may be only in contact with the common electrode 4B, but not with an isolated electrode 4A and thus no circuit is completed and the switch is not actuated. Accordingly, none of the cited references, taken alone or in combination, would result in a combination of features falling within the scope of independent Claim 13.

Therefore, since none of the cited references, taken alone or in combination, teaches or suggests independent Claim 13, applicant respectfully submits that the rejections of Claim 13 are overcome and Claim 13 is in condition for allowance.

The Rejection of the Dependent Claims is Overcome

Since each of the dependent claims contain each of the recitations of a respective independent base claim, Applicant respectfully submits that the rejections of the dependent claims are overcome for at least the reasons discussed above and as such the dependent claims

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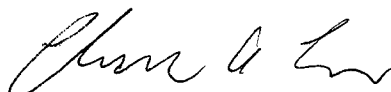
are patentably distinct from the cited references, taken alone or in combination, and are in condition for allowance.

CONCLUSION

In view of the amended claims and remarks presented above, it is respectfully submitted that all of the present claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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